Fig. 1

Figure 2

Dispersion Trimming Device: Spooled fiber or Discrete component

330

310_2

332

Erbium Doped Fiber amplifier

Transmission Fiber 360

320

Precabled fiber with fixed path average dispersion. This makes up the complete physical span.

Cabling surrounds fiber

310_1

Amplifier housing

Figure 3

$$D_{avg\,cable} = \frac{D_1 L_1 + D_2 L_2}{L_1 + L_2}$$

$$D_{average\,total} = \frac{D_1 L_1 + D_2 L_2 + D_{trim} L_{trim}}{L_1 + L_2 + L_{trim}} \text{ or } \frac{D_1 L_1 + D_2 L_2 + D_{trim}}{L_1 + L_2}$$
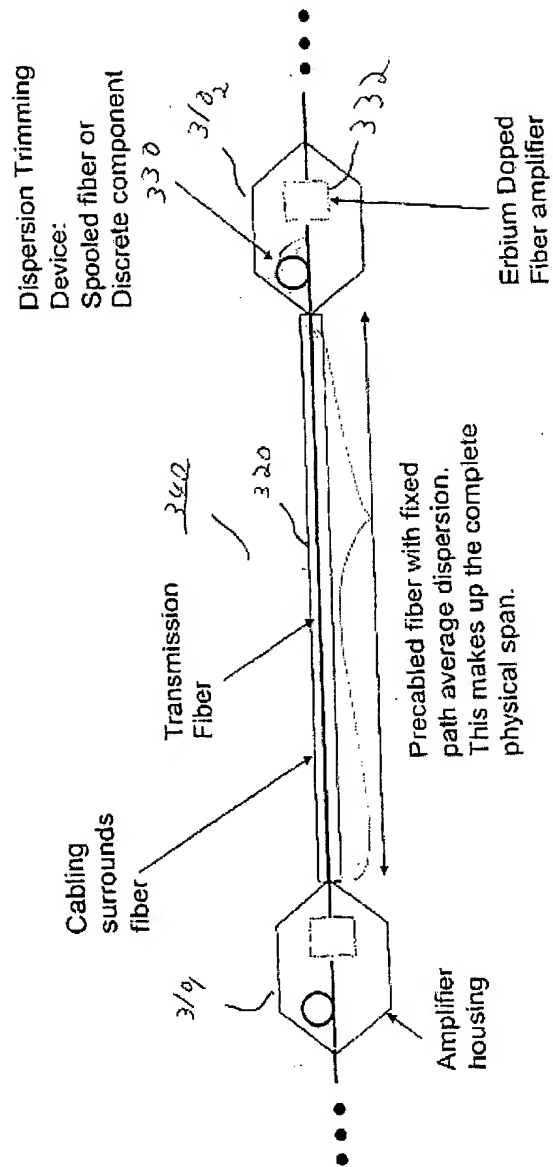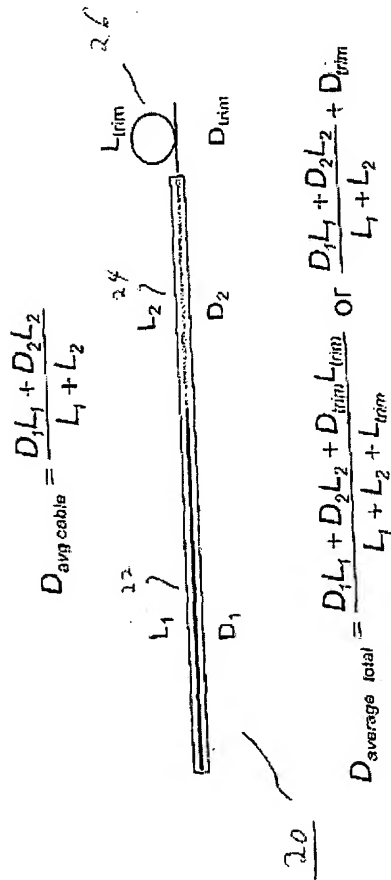
Where D_{trim} is the group delay (ps/nm) of a discrete device

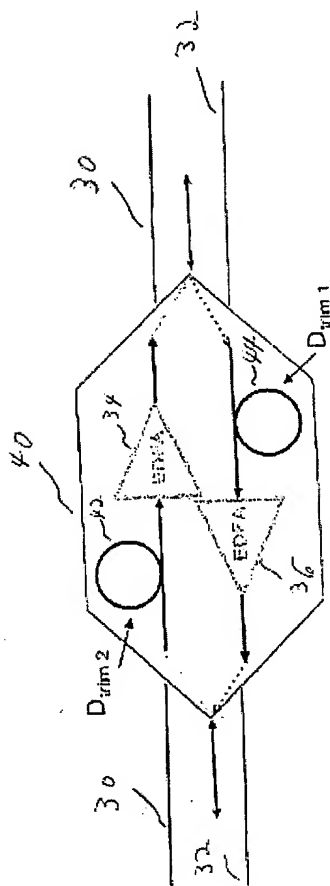Note: L_2 can be 0

Amplifier Design
for
Complex Dispersion Maps
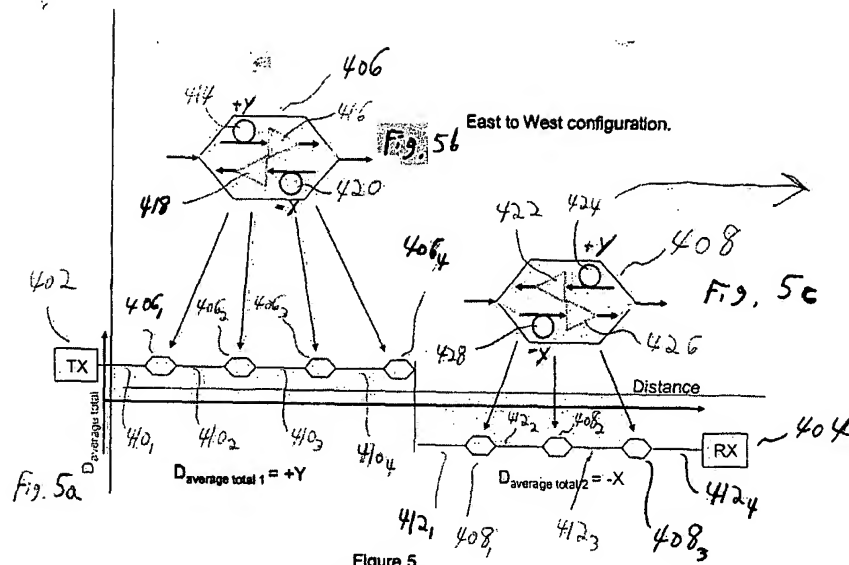

Figure 4

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East to West configuration.

F_{ig} 5b

F_{ig} 5c

F_{ig} 5a

$D_{average total 1} = +Y$

$D_{average total}/2 = -X$

Distance

Figure 5

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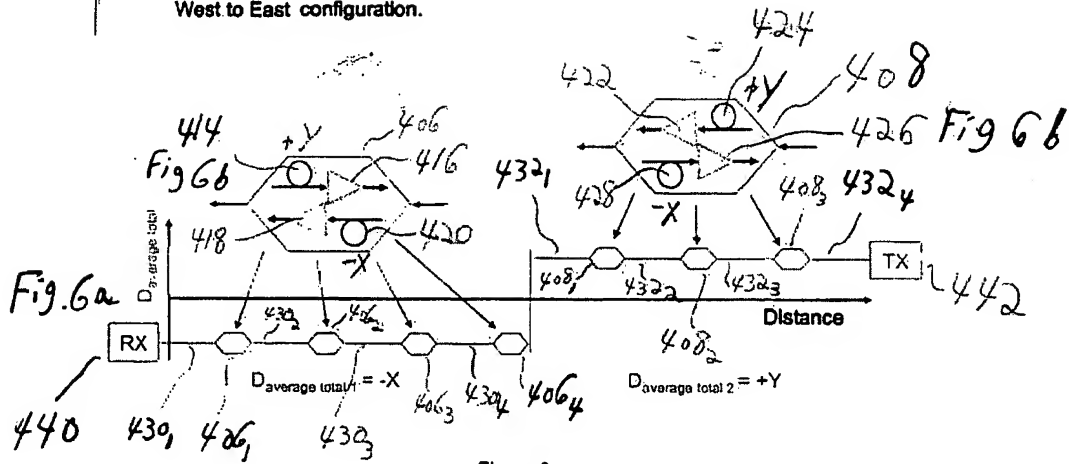F_{ig}, 5

Red Sky Docket No. 01

West to East configuration.

Figure 6

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Fig. 6